

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 1-40. (Canceled)

1 41. (Previously presented) A purified or isolated nucleic acid molecule, said
2 nucleic acid molecule selected from the group consisting of:

3 (a) a nucleic acid molecule consisting of SEQ ID NO:3 or the complementary
4 sequence to SEQ ID NO:3; and

5 (b) a nucleic acid molecule consisting of SEQ ID NO:5 or the complementary
6 sequence to SEQ ID NO:5.

1 42. (Canceled)

1 43. (Currently amended) The nucleic acid molecule of claim 41, wherein said
2 nucleic acid molecule is purified or isolated from genomic DNA.

1 44-47. (Canceled)

1 48. (Previously presented) A vector comprising a nucleic acid molecule
2 selected from the group consisting of:

3 (a) a nucleic acid molecule consisting of SEQ ID NO:3 or the complementary
4 sequence to SEQ ID NO:3; and

5 (b) a nucleic acid molecule consisting of SEQ ID NO:5 or the complementary
6 sequence to SEQ ID NO:5.

1 49-50. (Canceled)

1 51. (Previously presented) An isolated host cell transformed with the vector
2 of claim 48.

1 52. (Previously presented) The host cell of claim 51, wherein said host cell is
2 selected from the group consisting of a bacterium, a yeast cell, an insect cell, a fungal cell, a
3 mammalian cell, and a plant cell.

1 53-55. (Canceled)

1 56. (Previously presented) A diagnostic composition for diagnosing or
2 assessing an individual's predisposition to develop adult-type hypolactasia, comprising the
3 nucleic acid molecule of claim 77.

1 57-74. (Canceled)

1 75. (Previously presented) A kit comprising the nucleic acid molecule of
2 claim 77.

1 76. (Previously presented) The nucleic acid molecule of claim 41, consisting
2 of SEQ ID NO:3 or SEQ ID NO:5.

1 77. (Currently amended) A purified or isolated nucleic acid molecule, said
2 nucleic acid molecule comprising a sequence that corresponds to a fragment of SEQ ID NO:3 or
3 a fragment of the complementary sequence, wherein said sequence consists of (i) ~~at least~~ from
4 14 to 30 consecutive nucleotides of SEQ ID NO:3[,]] which includes position 324 of SEQ ID
5 NO:3 and hybridizes under highly stringent conditions to the complementary sequence, or (ii) a
6 sequence of at least from 14 to 30 consecutive nucleotides of the complementary sequence to
7 SEQ ID NO:3[,]] which includes position 324 of the complementary sequence and hybridizes
8 under highly stringent conditions to SEQ ID NO:3.

1 78. (Canceled)

1 79. (Currently amended) The nucleic acid molecule of claim 77, wherein said
2 ~~sequence consists~~ nucleic acid molecule comprises a sequence consisting of from 14 to 24
3 nucleotides.

1 80. (Currently amended) The nucleic acid molecule of claim 77, wherein said
2 ~~sequence~~ nucleic acid molecule comprises a detectable label.

1 81. (Previously presented) The nucleic acid molecule of claim 80, wherein
2 said detectable label is a fluorescent label.

1 82. (Previously presented) The nucleic acid molecule of claim 80, wherein
2 said detectable label is a radioactive label.

1 83-85. (Canceled)

1 86. (Previously presented) A kit comprising a nucleic acid molecule selected
2 from the group consisting of:

3 (a) a nucleic acid molecule consisting of SEQ ID NO:3 or the complementary
4 sequence to SEQ ID NO:3; and

5 (b) a nucleic acid molecule consisting of SEQ ID NO:5 or the complementary
6 sequence to SEQ ID NO:5.

1 87. (Previously presented) The nucleic acid molecule of claim 77, wherein
2 said nucleic acid molecule is a primer.

1 88. (Currently amended) The nucleic acid molecule of claim ~~[[77]]~~ 80,
2 wherein said nucleic acid molecule is a probe.

1 89. (Currently amended) A composition comprising:

2 (a) a first purified or isolated nucleic acid molecule comprising a sequence
3 that corresponds to a fragment of SEQ ID NO:3 or a fragment of the complementary sequence,
4 wherein said sequence consists of (i) a ~~first sequence of at least~~ from 14 to 30 consecutive

nucleotides of SEQ ID NO:3[,] which includes position 324 of SEQ ID NO:3 and hybridizes under highly stringent conditions to the complementary sequence, or (ii) **a sequence of at least from 14 to 30** consecutive nucleotides of the complementary sequence to SEQ ID NO:3[,] which includes position 324 of the complementary sequence and hybridizes under highly stringent conditions to SEQ ID NO:3; and

(b) a second purified or isolated nucleic acid molecule comprising a sequence that corresponds to a fragment of SEQ ID NO:5 or a fragment of the complementary sequence, wherein said sequence consists of (i) **a second sequence of at least from 14 to 30** consecutive nucleotides of SEQ ID NO:5[,] which includes position 324 of SEQ ID NO:5 and hybridizes under highly stringent conditions to the complementary sequence, or (ii) **a sequence of at least from 14 to 30** consecutive nucleotides of the complementary sequence to SEQ ID NO:5[,] which includes position 324 of the complementary sequence and hybridizes under highly stringent conditions to SEQ ID NO:5.

90. (Currently amended) The composition of claim 89, wherein each of said first and second ~~sequences consists~~ nucleic acid molecules comprises a sequence consisting of from 14 to 24 nucleotides.

91. (Currently amended) The composition of claim 89, wherein each of said first and second ~~sequences~~ nucleic acid molecules comprises a detectable label.

92. (Previously presented) The composition of claim 91, wherein said detectable label is a fluorescent label.

93. (Previously presented) The composition of claim 91, wherein said detectable label is a radioactive label.

94. (Previously presented) The composition of claim 89, wherein each of said first and second nucleic acid molecules is a primer.

1 95. (Currently amended) The composition of claim ~~[[89]]~~ 91, wherein each of
2 said first and second nucleic acid molecules is a probe.

1 96. (Previously presented) A kit comprising the composition of claim 89.

1 97. (Currently amended) A method for testing for the presence of or
2 predisposition to adult-type hypolactasia in a subject, said method comprising:

3 (a) contacting a nucleic acid obtained from said subject with a composition
4 comprising:

5 (i) a first **probe** purified or isolated nucleic acid molecule comprising
6 a sequence that corresponds to a fragment of SEQ ID NO:3 or a fragment of the complementary
7 sequence, wherein said sequence consists of (i) ~~a first sequence of at least~~ from 14 to 30
8 consecutive nucleotides of SEQ ID NO:3[[,]] which includes position 324 of SEQ ID NO:3 and
9 hybridizes under highly stringent conditions to the complementary sequence, or (ii) ~~a sequence~~
10 ~~of at least~~ from 14 to 30 consecutive nucleotides of the complementary sequence to SEQ ID
11 NO:3[[,]] which includes position 324 of the complementary sequence and hybridizes under
12 highly stringent conditions to SEQ ID NO:3; and

13 (ii) a second **probe** purified or isolated nucleic acid molecule
14 comprising a sequence that corresponds to a fragment of SEQ ID NO:5 or a fragment of the
15 complementary sequence, wherein said sequence consists of (i) ~~a second sequence of at least~~
16 from 14 to 30 consecutive nucleotides of SEQ ID NO:5[[,]] which includes position 324 of SEQ
17 ID NO:5 and hybridizes under highly stringent conditions to the complementary sequence, or (ii)
18 ~~a sequence of at least~~ from 14 to 30 consecutive nucleotides of the complementary sequence to
19 SEQ ID NO:5[[,]] which includes position 324 of the complementary sequence and hybridizes
20 under highly stringent conditions to SEQ ID NO:5;

21 (b) detecting the presence or absence of hybridization between said first and
22 second **probes** nucleic acid molecules with said nucleic acid obtained from said subject; and

23 (c) **indicating** determining the presence of or predisposition to adult-type
24 hypolactasia in said subject when the presence of hybridization between said second **probe**

25 nucleic acid molecule with said nucleic acid obtained from said subject is detected in the absence
26 of hybridization between said first **probe** nucleic acid molecule and said nucleic acid obtained
27 from said subject.

1 98. (Previously presented) The method of claim 97, wherein said nucleic acid
2 is obtained from a blood sample from said subject.

1 99. (Currently amended) The method of claim 97, wherein each of said first
2 and second ~~sequences consists~~ nucleic acid molecules comprises a sequence consisting of from
3 14 to 24 nucleotides.

1 100. (Currently amended) The method of claim 97, wherein each of said first
2 and second ~~sequences~~ nucleic acid molecules comprises a detectable label.

1 101 (Previously presented) The method of claim 100, wherein said detectable
2 label is a fluorescent label.

1 102. (Previously presented) The method of claim 100, wherein said detectable
2 label is a radioactive label.

1 103. (New) The method of claim 100, wherein each of said first and second
2 nucleic acid molecules is a probe.